IDRC - BAIF

IIIrd LIAISON COMMITTEE MEETING

TECHNICAL PRESENTATIONS

17th JANUARY 1990

MULTIPURPOSE TREE SPECIES

SLIDE A

BACKGROUND

- LIMITED OPPROTUNITY FOR GERMPLASM SELECTION
- PERFORMANCE OF MPTS ?
- ECONOMICS OF AGROFORESTRY AND WOODLOTS ?
- TREE-CROP INTERACTIONS ?
- CHOICE OF TREE SPECIES FOR AGROFORESTRY ?
- LACK OF PEOPLE'S PARTICIPATION

SLIDE B

OBJECTIVES

- ESTABLISHMENT OF ARBORETUM : 100 SPECIES
- SPECIES SELECTION FOR 3 DIFFERENT AGROCLIMATIC ZONES
- STANDARDISATION OF NURSERY TECHNIQUES
- OPTIMIZATION OF TREE DENSITY
- ON FARM TESTING OF WOODLOT ECONOMICS
- CHOICE OF SUITABLE AGROFORESTRY MODELS
- MOTIVATION AND FORESTRY EXTENSION

SLIDE C

ARBORETUM : SPECIES ESTABLISHED

GENERAL	NO.OF SPECIES	NO. OF STRAINTS
1. ACACIAS	35	49
2. MELIA	1	5
3. AZADIRACHTA	1	2
4. ROBINIA	1	4
5. SESBANIA	6	7
6. DENDROCALAMUS	1	1
7. OTHERS	20	20
TOTAL	66	88

SLIDE D

SITE DESCRIPTION

SITE	URULIKANCHAN	LAKKIHALLI	NANODARA
ALTITUDE (M)	560	600	45
LATITUDE (ON)	18.5	13.2	23
AV.RAINFALL (MM)	400	615	706
TEMPERATURE OC	8 - 42	15 - 38	6 - 44
SOIL - TYPE	GRAVELLY	SANDY LOAM	LOAMY SAND
- PH	7.8	7.0	8.7
- DEPTH	0.1	ABOVE 2	10 - 1.5

SLIDE E

PERFORMANCE OF MPTS IN DIFFERENT ZONES

AVERAGE GROWTH RATE PER YEAR

SPECIES	URULIKANCHAN HEIGHT CM	URULIKANCHAN DBH MM	LAKKIHALLI HEIGHT CM	LAKKIHALLI DBH MM	NANODARA HEIGHT CM	NANODARA DBH MM
ACACIA AURICULIFORMIS	119	7	172	12		*
ACACIA NILOTICA VAR CUP	127	13	25	02		*
ACACIA NILOTICA VAR TEL.	104	11	55	03	192	28
ALBIZIA FELCATARIA	-	-	84	07	-	-
ALBIZIA LEBBECK	119	18	151	12	158	24
AZADIRACHTA INDICA	130	19	99	07	199	30
CASSIA SIAMEA	151	13	111	09	-	-
CASUARINA EQUISETIFOLIA	159	9	164	09		*
DALBERGIA SISSOO	119	10	106	05	-	-
DERRIS INDICA	68	05	48	04	96	13
EUCALYPTUS CAMALDULENSIS	211	16	200	17	-	-
EUCALYPTUSHYBRID	200	17	176	15	-	-
EUCALYPTUS MICROTHICA	-	-	132	11	209	30
GLIRICIDIA SEPIUM	167	13	87	06	-	-
GMELINA ARBOREA	120	27	-	-	-	-
LEUCAENA LEUCOCEPHALA	197	21	114	08	134	28
MELIA AZEDARACH	170	20	140	11		**
PITHECELLOBIUM DULCE	123	13	74	04		*
PROSOPIS JULIFLORA	99	11	78	04		**

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* POOR SURVIVAL ** SAMPLES NOT ADEQUATE - NOT PLANTED

SLIDE F

STUDY OF TREE DENSITY

SPACING	PLANT POPULATION / HA	ACACIA NILOTICA VAR CUPRESSIFORMIS (AT 8 MONTHS AFTER PLANTING)		MELIA AZADERACH (AT 12 MONTHS AFTER PLANTING		
		HEIGHT CM	BASEL DIA CM	HEIGHT CM	BASEL DIA CM	DBH CM
1.5 x 1.0	6667	148	2.21	193	2.46	1.20
1.5 x 1.5	4444	150	2.47	178	2.50	1.12
2.0 x 1.0	5000	141	2.32	214	2.79	1.45
2.0 x 2.0	2500	156	2.57	218	2.89	1.48
3.0 x 1.0	3333	138	2.04	226	2.96	1.66
3.0 x 2.0	1667	161	3.72	236	3.42	1.96
3.0 x 3.0	1111	135	2.29	251	3.45	1.94

SLIDE G

STUDY OF TREE DENSITY

SPACING	PLANT POPULATION PER HA	ACACIA AURICULIFORMIS		CASSIA SIAMEA	
		HEIGHT CM	CANOPY CM	HEIGHT CM	CANOPY CM
1 x 1	10000	134	75	75	66
1 x 2	5000	130	75	51	56
1 x 3	3333	118	61	49	45
2 x 2	2500	115	54	46	40
1.5 x 3	2222	123	65	47	41

NOTE: OBSERVATIONS WERE TAKEN 14 MONTHS AFTER PLANTING

SLIDE H

EFFECT OF AGE OF THE SEEDLINGS ON GROWTH

TYPE OF SEEDLING	ACACIA AURICULIFORMIS HEIGHT CM	CANOPY CM	CASSIA SIAMEA HEIGHT CM	CANOPY CM
DIRECT SEEDING	49	34	46	47
BAREROOT - 75 DAYS OLD	102	61	62	63
BARE ROOT -150 DAYS OLD	132	85	55	52
POLYPOT - 75 DAYS OLD	125	81	80	82
POLYPOT - 150 DAYS OLD	140	86	85	79

SLIDE I

EFFECT OF AGE OF THE SEEDLINGS ON GROWTH

	MELIA AZEDARACH HEIGHT CM	BASAL DIA CM	DBH CM
DIRECT SEEDING	154	2.23	8
BARE ROOT - 50 DAYS OLD	154	2.05	8
BARE ROOT - 100 DAYS OLD	154	2.27	8
POLY POT - 50 DAYS OLD	168	2.28	8
POLY POT - 100 DAYS OLD	158	2.37	9

SPACING : 1 X 1 M. OBSERVATIONS TAKEN 14 MONTHS AFTER PLANTING.

RESEARCH PROGRAMMES UNDER IDRC - BIS

II YEAR

PROJECT NO.	PROJECT TITLE
1.	Information Resource Centre.
2.	Community Based Research in Human Development (Rural)
3.	Community Based Research (Tribal)
6.	Upgrading of Frozen Semen Technology and it's transfer for the development of buffaloes.
7.	Rural Polytechnic.
8.	Development and standardisation of production technology for VA Mycorrhiza Innocula.
9.	Development of Improved Marek's Disease Vaccine.
12.	Development of Cheap Cattle Feeds & Feed supplements from locally available by-products.
14.	Development of Sericulture Technology.
15.	Exploratory Studies and Operations Research on Post Production Technologies.

IDRC - BIS PROGRAMME

SLIDE J

EFFECT OF MELIA TREES ON PEARL MILLET CROP

PARAMETERS	TREATMENTS (DISTANCE FROM TREE ROW)			
	1 0 - 1 M	2 1 - 2 M	3 2 - 3 M	4 3 - 4 M
DAYS TAKEN FOR GERMINATION	6.6	6.4	5.3	5.0
PERCENTAGE OF GERMINATION	71.4	75.7	84.3	90.0
FOLIAGE AT 2 MONTHS AFTER SOWING	PALE GREEN	GREEN	GREEN	GREEN
CROP MATURITY (GESTATION PERIOD)	DELAYED	NORMAL TO SLIGHT DELAY	NORMAL	NORMAL
YIELD PER M2 GRAIN GM/M	92.86	138.57	193.57	207.14
STOCK KG/M	3.71	3.79	5.71	6.14

NOTE: AGE OF THE MELIA TREES - 2.5 TO 3 YEARS PEARL MILLET CROP WAS RAINFED

INFORMATION RESOURCE CENTRE

SLIDE A

OBJECTIVES

* PROVIDE SUPPORT SERVICES TO BAIF'S PROGRAMMES
* ASSIST IN PROGRAMME MONITORING
* DESIGN DEVELOP APPLICATION SOFTWARE SYSTEMS
* DOCUMENT AND CREATE DATABASES ON BAIF'S RESEARCH

SLIDE B

IRC FUNCTIONS

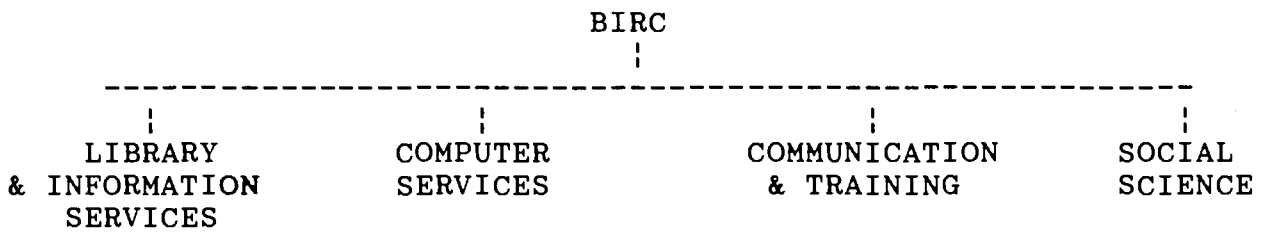
... DATA COLLECTION

... DATA PROCESSING

... DATA PACKAGING

... DATA DISSEMINATION

SLIDE C



SLIDE D

LIBRARY AND INFORMATION SERVICES

OBJECTIVES

* SET UP CENTRAL INFORMATION RESOURCE BASE
* DOCUMENT R & D INFORMATION
* PROVIDE INFORMATION SERVICES
  .. RESEARCH STAFF
  .. FIELD EXTENSION STAFF

SLIDE E

WORK SUMMARY

* SURVEY OF USERS' INFORMATION NEEDS
* CREATION OF AN INTEGRATED DATABASE
* INFORMATION SERVICES AND PRODUCTS
* OTHER ACTIVITIES :
  A. COLLECTION BUILDING
  B. RESOURCE SHARING
  C. TRAINING.

SLIDE F

SURVEY OF USERS' INFORMATION NEEDS

* IDENTIFICATION OF TWO USER GROUPS :
  - A. RESEARCH & DEVELOPMENT STAFF
  - B. EXTENSION WORKERS
* COMPILATION OF USER PROFILES

SLIDE G

BIRC DATABASE

- BIBILIOGRAPHIC
- INSTITUTIONS
- EXPERTS/SPECIALISTS
- PROJECTS

SLIDE H

INFORMATION SERVICES AND PRODUCTS

* CURRENT CONTENTS
* ARTICLE ALERT
* INFORMATION UPDATE
* SPECIAL SUBJECT BIBLIOGRAPHIES
* COMPUTER ASSISTED LITERATURE SEARCHES

SLIDE I

ACTION PLAN FOR 1990 - 91

* ONGOING ACTIVITIES
  .. INFORMATION NEEDS SURVEY
  .. INFORMATION SERVICES

* REGIONAL INFORMATION DISSEMINATION CENTRES

* BIRC NEWSLETTER / BULLETIN

IRC - COMPUTER CELL

SLIDE A

OBJECTIVES

* COMPUTERISATION FOR VARIOUS APPLICATIONS
* TRAINING IN USE OF COMPUTERS.

SLIDE B

WORK SUMMARY

* HARDWARE PROCUREMENT AND INSTALLATION
* SOFTWARE PROCUREMENT AND INSTALLATION
* SYSTEMS DEVELOPMENT
* SETTING UP OF DTP SYSTEMS
* TRAINING

SLIDE C

HARDWARE PROCURED AND INSTALLED

MICROS : PC (1) PC XT (4) PC AT (2)
PC AT386 (1) WITH DUMB TERMINALS (3)

PERIPHERALS :

UPS 0.5 KVA (2) 1 KVA (1)
2 KVA (3)

PRINTERS LQ (1) NLQ (5)
LASER JET (1)

SPOOLER (1) MOUSE (1)

CARTRIDGE TAPE DRIVE (1)

HAND HELD TERMINAL (1)

TRANSCRIPT CARD (2)

TELEX ADD - ON BOX (1)

SLIDE D

SOFTWARE PROCURED

WORDSTAR	LOTUS 123 VER 1
CLIPPER SUMMER 87	AUTOCODE
DEXTRA	UNIX OPERATING SYSTEM

SLIDE E

SYSTEMS DEVELOPMENT

COMPLETED :

- PAYROLL
- PROJECT MANAGEMENT
- PERSONNEL DATABASE & REPORTING
- PROVIDENT FUND
- OTHERS

IN PROGRESS :

- DAIRY CATTLE MONITORING & REPORTING
- FINANCIAL ACCOUNTING
- WADI MONITORING & REPORTING
- INVENTORY MANAGEMENT

SLIDE F

ACTION PLAN FOR 1990 - 91

* SYSTEMS DEVELOPMENT :
  - HEALTH CARE PROGRAMME
  - ONGOING WORK
* ADDITION OF HARDWARE AND SOFTWARE
* TRAINING

IRC - COMMUNICATION & TRAINING CELL

SLIDE A

OBJECTIVES

* ASSIST IN MAKING EFFECTIVE COMMUNICATION AIDS
* PRE-TEST COMMUNICATION MATERIAL.

SLIDE B

WORK SUMMARY

* SURVEY OF COMMUNICATION NEEDS
* DESIGN AND PRODUCTION OF TRAINING MATERIAL
* PRE-TESTING
* DATABASE OF COMMUNICATION MATERIAL

SLIDE C

COMMUNICATION NEEDS SURVEY

TO ASSESS COMMUNICATION NEEDS IN TERMS OF

.. OBJECTIVES

.. MESSAGE

.. METHOD OF INSTRUCTION

.. TARGET GROUP

.. TYPE OF AID

WHETHER THE TOPIC MERITS FOCUS GROUP INTERVIEW

PRIORITY SUBJECT AREAS BEING IDENTIFIED.

DESIGN AND PRODUCTION OF TRAINING MATERIAL

* FLIP CHARTS
* SLIDE SETS
* SCRIPT FOR FILMS

SLIDE D

DATABASE OF TRAINING MATERIAL

* SLIDES
* FILM STRIPS
* VIDEO CASETTES

SLIDE E

PRE-TESTING OF TRAINING MATERIAL

TO ASSESS EFFECTIVENESS OF COMMUNICATION MATERIAL

MATERIAL TESTED :

.. TRAINING BOOKLETS

.. CHARTS

TARGET GROUP :

.. MARGINALLY LITERATE FARMERS

.. FIELD LEVEL WORKERS (TRAINERS)

SLIDE F

ACTION PLAN FOR 1990 - 91

* STUDIES TO BE CONTINUED

.. SURVEY OF COMMUNICATION NEEDS

.. PRE-TESTING OF TRAINING MATERIAL

* DESIGN AND PRODUCTION OF TRAINING AIDS

IRC - SOCIAL SCIENCE CELL

SLIDE A

BAIF PROGRAMME APPROACH

* CREATE SELF EMPLOYMENT OPPORTUNITIES
* REHABILITATE IN OWN ENVIRONS
* UPGRADE NATURAL RESOURCES
* APPLICATION OF S & T
* TECHNO-MANAGERIAL INPUTS
* EMPHASIS ON VALUE SYSTEM

SLIDE B

BAIF IMPLEMENTATION STRATEGIES

.. ESTABLISH RAPPORT
.. IDENTIFY NEEDS ENTRY POINTS
.. CREATE AWARENESS
.. MOTIVATE PARTICIPATION
.. DEVELOP CONFIDENCE

SLIDE C

SOCIAL SCIENCE APPROACH IS AN INTEGRAL PART OF BAIF'S PROGRAMMES.

SLIDE D

SOCIAL SCIENCE CELL : OBJECTIVES

* FORMALISE SOCIAL SCIENCE APPROACH
* STRENGTHEN BAIF IMPLEMENTATION STRATEGIES
* INSTIL SOCIAL SCIENCE PERSPECTIVE

SLIDE E

ACTIVITIES

* RESEARCH STUDIES
* INPUTS TO DEVELOPMENT ACTIVITIES
* TRAINING :
  - .. BAIF STAFF
  - .. COMMUNITY FUNCTIONARIES

SLIDE F

STUDIES UNDERTAKEN

* WADI SOCIAL IMPACT
* DEVELOPMENT OF 'WAVLI' GROUPS
* DOCUMENTATION OF COMMUNITY LIFE
* SOCIO-ECONOMIC STATUS OF RURAL WOMEN

SLIDE G

'WADI' SOCIAL IMPACT

OBJECTIVES :

- .. CHANGE IN SOCIO-ECONOMIC STATUS
  - .. PARTICIPATION IN SOCIAL ACTIVITIES
  - .. INCOME GENERATION
  - .. USE OF MODERN EQUIPMENTS
- .. BEHAVIOURAL CHANGE
  - .. USE OF HEALTH SERVICES
  - .. CHILDREN'S EDUCATION
- .. ATTITUDE TO MODERNISATION & TECHNOLOGY

SLIDE H

DEVELOPMENT OF 'WAVLI' GROUP

PRELIMINARY FINDINGS :

* POOR AND ILLITERATE PARTICIPANTS
* SKILLS AND KNOWLEDGE ACQUIRED
* SURVIVAL MECHANISM : INCOME SOURCE
* CHANGE IN BEHAVIOUR
* WIDER RANGE OF ACTIVITIES WELCOME

NO OF WAVLI PARTICIPANTS RISEN TO OVER 500

TRIBAL WOMEN IN 30 GROUPS

SLIDE I

DOCUMENTATION OF COMMUNITY LIFE

.. TYPE OF TRIBAL GROUPS

.. FAMILY PATTERN

.. TYPE OF HOUSE

.. WOMEN IN TRIBAL LIFE

.. SOCIAL - ECONOMIC INSTITUTIONS

.. PRACTICES AND CUSTOMS

.. DIVISION OF LABOUR

SLIDE J

SOCIO-ECONOMIC STATUS OF RURAL WOMEN

* ASSESS STATUS AND ROLE IN

  .. DECISION MAKING

  .. SOCIAL ACTIVITIES

  .. INCOME GENERATING ACTIVITIES

* IDENTIFY SUITABLE INTERVENTIONS

SLIDE K

ACTION PLAN FOR 1990 - 91

RESEARCH STUDIES :

CONTINUATION OF ONGOING STUDIES

NEW STUDIES :

.. BASELINE STUDY IN TRIBAL AREAS

.. VALIDATION OF INDICATORS

TRAINING :

BAIF STAFF

COMMUNITY FUNCTIONARIES

COMMUNITY BASED RESEARCH

IN HUMAN DEVELOPMENT (RURAL)

SLIDE A

PROJECT AREA SCENARIO :

.. RAIN SHADOW AREA - SCANTY RAINS

.. LIGHT SOILS

.. NON-PRODUCTIVE SCRUB CATTLE

.. LIMITED CROP DIVERSITY

SLIDE B

RURAL POVERTY : MAIN FACTORS

.. UNDER-EMPLOYMENT

.. POOR NATURAL RESOURCE BASE

.. LACK OF NEWER TECHNICAL INPUTS

SLIDE C

OBJECTIVES

. DEVELOP A MODEL FOR IMPROVING QUALITY OF LIFE

. LIVELIHOOD ACTIVITIES

. RURAL HEALTH, HYGIENE

. TRAINING

SLIDE D

LIVELIHOOD ACTIVITIES

FIELD ACTIVITIES :

- .. ON FARM TRIALS FOR AGRICULTURAL CROPS
- .. NURSERIES OF HORTICULTURE AND FORESTRY TREES
- .. CATTLE BREEDING.

ACTION BASED RESEARCH :

- .. STUDY OF FARMING PRACTICES

SLIDE E

RURAL HEALTH AND HYGIENE

FIELD ACTIVITIES :

- .. BOREWELLS
- .. DRINKING WATER TREATMENT
- .. HEALTH CARE CAMPS
- .. HEALTH EDUCATION CAMPS

SLIDE F

RURAL HEALTH AND HYGIENE

ACTION BASED RESEARCH :

.. BASELINE SURVEY

.. KAP OF TBA

.. DRINKING WATER AND GIT MORBIDITY

.. MORBIDITY PATTERN IN STUDENTS

.. NUTRITIONAL STATUS OF UNDERFIVES

SLIDE G

TRAINING

LIVELIHOOD PROGRAMME :

.. NURSERY MANAGEMENT

.. GRAFTING

.. FRUIT TREES, AGROFORESTRY CARE

.. CALF CARE

.. MILCH-COW MANAGEMENT

RURAL HEALTH & HYGIENE :

. KG TEACHERS : PRE-SCHOOL EDUCATION, PH CARE

. TBA : ANC, ASEPTIC DELIVERY, CHILD CARE

. SCHOOL STUDENTS : HYGIENE

. COMMUNITY : SANITATION

COMMUNITY BASED RESEARCH (TRIBAL)

SLIDE A

PROGRAMME FOR TRIBAL REHABILITATION

.. PREVENT MIGRATION.

.. GENERATE SELF EMPLOYMENT OPPORTUNITIES

.. DEVELOP SUSTAINABLE LIVELIHOOD

.. IMPROVE QUALITY OF LIFE

SLIDE B

WAVLI

A UNIQUE TRIBAL TRADITION GIVING A WOMAN

SOVEREIGN RIGHT OVER HER EARNINGS

SLIDE C

OBJECTIVES

* DEVELOP INSTRUMENTS FOR TRIBAL DEVELOPMENT

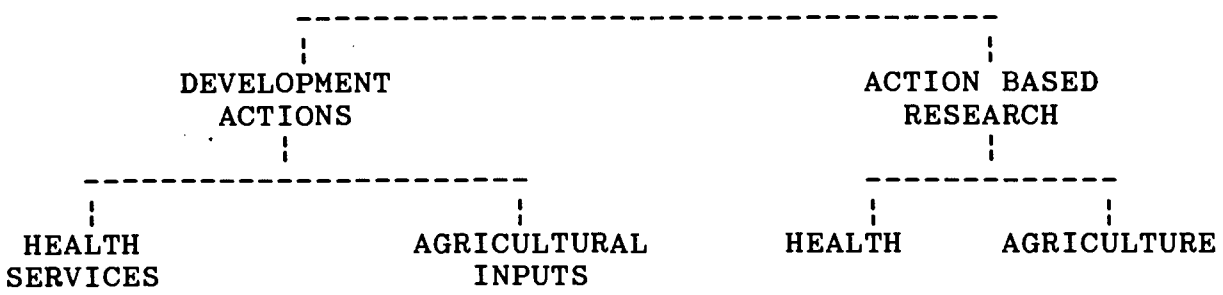
* ACTION RESEARCH IN :

.. LIVELIHOOD ACTIVITIES

.. COMMUNITY HEALTH.

SLIDE D

COMPONENTS
CBR(T)



SLIDE E

HEALTH SERVICES

MCH CLINICS

HEALTH CAMPS

HEALTH EDUCATION

CHLORINATION

HEALTH KITS

TRAININGS

SLIDE F

RESEARCH STUDIES

.. BASELINE STUDY

.. PREVALENCE OF HB-PATHY & GOITRE

.. LONGITUDINAL STUDIES IN MCH

.. NUTRITIONAL STATUS OF UNDERFIVES

.. SPECIAL ENQUIRY IN MORTALITY

SLIDE G

BASELINE STUDY

METHODOLOGY :

RAPID APPRAISAL OF SITUATION

COMPILATION OF SECONDARY DATA

DATA COLLECTED IN FAMILY SCHEDULES

SLIDE H

SALIENT FINDINGS : HEALTH

* POOR SANITATION : ONLY 11 LATRINES
* DRINKING WATER : UNSAFE SOURCES
* BHAGAT AS FIRST CONTACT WITH HEALTH CARE
* IMMUNIZATION COVERAGE ONLY 57 %
* BIRTHS & DEATHS : GROSS UNDER-REPORTING
* MORBIDITY : LOW REPORTING , PREVENTABLE
* LATE WEANING PRACTICE

SLIDE I

SALIENT FINDINGS : AGRICULTURE

* 46.8 % INVOLVED IN AGRICULTURE
* ENTIRELY RAINFED AGRICULTURE
* SMALL & MARGINAL FARMERS
* TRADITIONAL EQUIPMENTS
* PADDY AS MAIN CROP
* INDEGENOUS CATTLE

SLIDE J

LONGITUDINAL STUDIES IN MCH

* PATTERN OF HIGH RISK IN MOTHERS

ANAEMIA	84.7%	B.O.H.	5.4%
MALPRESENTATIONS	2.7%	OTHERS	7.2%

* RISK FACTORS IN CHILDREN

ANAEMIA	49 %	P.E.M.	32.7 %
VIT.A DEFICIENCY	10 %	L.B.W.	8.2 %

SLIDE K

PREVALENCE OF HB-PATHY AND GOITRE

TOTAL CASES EXAMINED : 456

HAEMOGLOBIN DETERMINATION FOR 254

HAEMOGLOBIN ELECTROPHORESIS DONE FOR 195

* PREVALENCE OF SICKLE-CELL TRAIT 9.74 %
* SICKLE CELL ANAEMIA 1.03 %
* PREVALENCE OF GOITRE 40 % IN FEMALES
* 60.6 % CASES - HAEMOGLOBIN < 10 GM %
* HISTORY OF HOOKWORM INFESTATION COMMON

SLIDE L

SPECIAL ENQUIRY IN MORTALITY

SALIENT FINDINGS : MATERNAL

* 86 % : 18 - 25 YRS OLD
* NO AN CARE IN 86 %
* OVER 50 % RETROSPECTIVELY HIGH RISK
* PREVENTABLE CAUSES :
  - .. ANAEMIA
  - .. ECLAMPSIA
  - .. PUERPERIAL SEPSIS

SLIDE M

SALIENT FINDINGS : UNDERFIVES

* 12/16 (75%) INFANT DEATHS
* 6 RECEIVED TREATMENT - ONLY BHAGAT
* PREVENTABLE CAUSES :
  .. DIARRHOEA
  .. ACUTE RESP. INFECTIONS

SLIDE N

AGRO-BASED ACTIVITIES

RESEARCH STUDIES

* FARMING SYSTEMS WITH SPECIAL REFERENCE TO PADDY
* AGRO SERVICE CENTRE
* FIELD PERFORMANCE OF MANGO GRAFTS

SLIDE O

STUDY OF FARMING SYSTEMS : BACKDROP

* WADI PROGRAMME :
  .. INITIATED IN 1982
  .. BASED ON WASTELANDS
* CONFIDENCE IN BAIF
* GROWING RESPONSE & INCREASED RECEPTIVITY TO NEW IDEAS
* GOOD SCOPE FOR AGRI. DEV
* PROPER TIME FOR NEW DEVELOPMENT INTERVENTIONS
* HENCE STUDY OF FARMING SYSTEMS

SLIDE P

THREE STAGES OF STUDY

* RAPID APPRAISAL
* STRUCTURED SURVEY
* INTENSIVE OBSERVATIONS

SLIDE Q

MAIN FINDINGS /OBSERVATIONS

* HILLY TRACT, LIGHT SOILS
* RAINFED PADDY CROP
* SMALL LAND HOLDINGS
* TRADITIONAL CULTIVATION PRACTICES
* SPARSE MANURE & FERTILISER USAGE
* MINIMAL AFTERCARE
* LATE NURSERY RAISING
* LOW CROP YIELDS

SLIDE R

RECOMMENDATIONS

* INITIATE EARLY NURSERIES
* PROMOTE SCIENTIFIC FARMING TECHNIQUES
* PROMOTE USE OF FYM, IMPROVED IMPLEMENTS
* BREAK HARD PAN USING SUB-SOILER
* INTRODUCE WINTER CROP
* MAKE AVAILABLE IMPROVED SEEDS, FERTILISERS, BIOFERTILISERS.

SLIDE S

AGRO SERVICE CENTRE

BACKGROUND

* RECOMMENDATIONS OF FSR
* NEED TO INTRODUCE IMPROVED PRACTICES
* ACCESS TO IMPROVED TOOLS AND EQUIPMENT

SLIDE T

ACTIVITIES

* CUSTOM HIRING OF EQUIPMENT
* PROMOTING USE OF IMPROVED IMPLEMENTS
* PROVIDING INPUTS

SLIDE U

GRAFTING SYSTEM STUDY

BACKGROUND

* WADI PROGRAMME :
  - .. HORTICULTURE BASED
  - .. HIGH REQUIREMENT OF MANGO GRAFTS
  - .. HIGH MARKET PRICE
  - .. TRAINING IN GRAFTING SKILLS
  - .. SHORT GRAFTING PERIOD
  - .. NEED TO OPTIMISE COMBINATION OF GRAFTING METHOD AND SEASON

SLIDE V

GRAFTING METHODS

* STONE GRAFTING IN BAG
* STONE GRAFTING IMMEDIATELY TRANSPLANTED
* SOFTWOOD GRAFTING IN 3 DIFFERENT SEASONS (JUNE, OCTOBER AND FEBRUARY)
* SAMPLE SIZE PLANNED 40 GRAFTS IN EACH
* PARAMETERS HELD CONSTANT :
  - .. LAND QUALITY
  - .. PLANTATION, PIT SIZE, FERTISER DOSES, GRAFTING TECHNICIAN, BUDSTICK LENGTH.
  - .. AFTERCARE, WATERING, WEEDING, MULCHING

SLIDE W

PARAMETERS TO BE STUDIED

* SURVIVAL RATE
* GROWTH :
  - .. HEIGHT
  - .. NO OF NODES
  - .. NO OF BRANCHES

SLIDE X

ACTION PLAN FOR 1990 - 91

.. HEALTH SERVICES

.. RESEARCH STUDIES FOR NEWER AREAS

.. RAPID APPRAISAL OF SITUATION

- HEALTH
- DRINKING WATER

.. TRIAL FOR HOOKWORM CONTROL

.. TRAINING

UPGRADING OF FROZEN SEMEN TECHNOLOGY

AND

ITS TRANSFER FOR THE DEVELOPMENT OF BUFFALOES

SLIDE A

BUFFALO BREEDING : PRESENT PROBLEMS

... USE OF SCRUB BULLS

... NATURAL SERVICE

SLIDE B

CORRECTIVE MEASURES

... POPULARISE ARTIFICIAL INSEMINATION IN BUFFALOES

... SHORTCOMINGS :

... LACK OF QUALITY CONTROL.

... POOR PRESERVABILITY OF SEMEN.

... LOW CONCEPTION RATE.

SLIDE C

OBJECTIVES

.. STANDARDISE SEMEN PACKAGING AND DEEP FREEZING TECHNOLOGY.

.. TEST FERTILITY RATE.

.. LARGE SCALE APPLICATION.

SLIDE D

STANDARDISING GLYSEROLIZATION FOR CRYO-PRESERVATION

TWO TREATMENTS GIVEN :

1. SINGLE STEP DILUTION AT ROOM TEMP.
2. STEPWISE DILUTION AT 4 C.

THE LATTER SEEMS TO BE THE METHOD OF CHOICE.

SLIDE E

STANDARDISING EQUILIBRIUM TIME

TREATMENTS TRIED :

... 6 HOURS (CONVENTIONAL)

... 3 HOURS (NEWER METHOD)

LATTER FOUND BENEFICIAL.

SLIDE F

STANDARDISING SEMEN FILTRATION TECHNIQUE

.. SEPHADEX G -15 SLURRY IN TRIS BUFFER USED.

GLASS WOOL- SEPHADEX COLUMN FOUND TO RETAIN ABNORMAL AND DEAD BUFFALO SPERM.

SLIDE G

STANDARDISING HYALURONIDASE ENZYME ASSAY

.. MODIFIED ALFRED - LINKER METHOD SUCCESSFULLY APPLIED TO RAW, DILUTED AND FROZEN BUFFALO SEMEN.

SLIDE H

SEASONAL VARIATION IN SEMENAL PARAMETERS

PARAMETERS UNDER OBSERVATION :

... EJACULATE VOLUME.

... SPERM CONCENTRATION.

... MASS ACTIVITY.

... PRE & POST FREEZING MOTILITY, ETC.

SLIDE I

SERVICE BEHAVIOUR OF MURRAH BULLS

BEHAVIOURAL PARAMETERS CONSIDERED :

... LIBIDO

... MOUNT

... REACTION TIME

SEASONAL VARIABILITY OBSERVED.

SLIDE J

ACTION PLAN FOR 1990 - 91

STANDARDISATION OF :

.. FREEZING RATES

.. SEMEN PACKAGING TECHNOLOGY.

RURAL POLYTECHNIC

SLIDE A

THE INDIAN SCENARIO

* OVER 70 % POPULATION INVOLVED IN AGRICULTURE
* INDUSTRIAL SECTOR
  - .. LOW GROWTH IN EMPLOYMENT
  - .. HIGHLY CAPITAL INTENSIVE

SLIDE B

FUTURE TRENDS

- .. HIGH MANPOWER PRESSURE ON LAND
- .. MASSIVE UNDER-EMPLOYMENT
- .. REDUCING VIABILITY OF AGRICULTURAL OPERATIONS

SLIDE C

KEY AREAS

* FUNCTIONAL EDUCATION
* SKILLS TRAINING FOR SELF-EMPLOYMENT
* DUE EMPHASIS ON OFF FARM/NON FARM ACTIVITIES

SLIDE D

RURAL POLYTECHNIC : APPROACH

- MULTI-DISCIPLINARY
- MULTI-LOCATIONAL
- TECHNICAL TRAINING
- SKILLS -> LIVELIHOOD ACTIVITY
- MARKET LINKAGES
- POST TRAINING SUPPORT
- EMPHASIS ON TRAINING WOMEN

SLIDE E

OBJECTIVES

STUDY OCCUPATIONAL PATTERN & SKILL LEVELS

STUDY RESOURCE AVAILABILITY AND SCOPE FOR APPROPRIATE VOCATIONS

SELECT & DEVELOP TRAINING COURSES

IMPART TRAINING

PROVIDE PRODUCTION & MARKET LINKAGES

SLIDE F

WORK SUMMARY

* VILLLAGE LEVEL SURVEY
* MASTER PLAN FORMULATION
* TRAINING COURSE DESIGN
* INFRASTRUCTURE PLANNING
* TRAINING MATERIAL DESIGN

SLIDE G

DIVISIONS

GROUP A

.. AGRICULTURE

.. HORTICULTURE

.. AGROFORESTRY & ENVIRONMENT

GROUP B

.. COTTAGE INDUSTRIES

GROUP C

.. RURAL HOUSING

.. ENGINEERING SCIENCES

GROUP D

.. LIVESTOCK DEVELOPMENT

.. LAND & WATER RESOURCE

GROUP E

.. HUMAN HEALTH

GROUP F

.. INFORMATION SCIENCES

SLIDE H

.. CURRICULA DEVELOPMENT

.. PILOT TRAINING COURSES

.. FORMAL RECOGNITION

SLIDE I

TRAINING AREAS : MASTER PLAN

AGRICULTURE DIVISION :

.. NURSERY RAISING (FRUIT & FORESTRY)

.. MUSHROOM CULTIVATION

.. VERMICULTURE

.. PLASTICULTURE

.. AGROFORESTRY

.. VEGETABLE CULTIVATION

.. FODDER PRODUCTION

.. HORTICULTURE

.. BIOFERTILISERS

SLIDE J

LIVESTOCK DEVELOPMENT DIVISION :

.. DAIRY ANIMAL PRODUCTION & MANAGEMENT

.. DAIRY PROCESSING

.. LOW COST CATTLE FEED

.. POULTRY PRODUCTION

.. AQUACULTURE

SLIDE K

LAND AND WATER RESOURCE DIVISION :

.. WATERSHED SURVEY AND PLANNING

.. IRRIGATION SYSTEMS DESIGN

.. CIVIL ENGINEERING SURVEYS

SLIDE L

RURAL HOUSING :

.. CONSTRUCTION MATERIALS

.. FERROCEMENT CONSTRUCTION

.. RURAL WATER SUPPLY AND SANITATION

SLIDE M

ENGINEERING SCIENCES :

.. FABRICATION

.. ELECTRICAL FITTINGS

.. AUTOMOBILE MECHANICS

.. DIESEL ENGINE/MOTORS, PUMPS MECHANICS

.. MACHINING, TURNING, FITTING

.. ELECTRONICS ASSEMBLY

.. BIOGAS ENGINEERING

.. RENEWABLE ENERGY TECHNOLOGIES

.. WOOD SEASONING & WOOD WORKING

.. PLASTICS MOULDING

SLIDE N

HOME & COTTAGE INDUSTRIES DIVISION :

.. FRUIT PRESERVES/OTHER FOOD PRODUCTS

.. BAKERY

.. HOUSEHOLD UTILITIES

.. TAILORING/KNITTING

.. POTTERY CERAMICS

.. SERICULTURE

.. PACKAGING

.. LAUNDRY

INFORMATION SCIENCES :

.. PHOTOGRAPHY/VHS

.. PRINTING TECHNOLOGY

.. SECRETARIAL SERVICES

.. COMPUTER SCIENCES

SLIDE O

HUMAN HEALTH :

.. CRECHE MANAGEMENT

.. BALWADI MANAGEMENT

.. PHYSIOTHERAPY

.. NATUROPATHY AND YOGA

.. TRAINING OF DEAF-MUTE

SLIDE P

ACTION PLAN FOR 1990 - 91

* DEVELOPING INFRASTRUCTURAL FACILITIES
* MANPOWER PLANNING
* PROCURING/PREPARATION OF TRAINING MATERIAL
* CONDUCTING TRAINING COURSES
* POST TRAINING SUPPORT/GUIDANCE

DEVELOPMENT AND STANDARDISATION

OF

PRODUCTION TECHNOLOGY FOR VA MYCORRHIZA INNOCULA

S U M M A R Y

Vesicular Arbuscular Mycorrhiza are beneficial symbiotic interactions between plant roots and soil fungi. VA Mycorrhizal fungi are Zygomycetous soil and root inhabiting fungii which can enhance plant growth by improving uptake of phosphorous, water and other nutrients.

1. Development and Standardisation of Production Technology for VA Mycorrhiza Inocula.

2. Objectives -

To develop at pilotscale the mass production for VA Mycorrhiza and its inuculation in forestry species.

.. To develop the techniques of mass production of pathogen free VA Mycorrhiza.

.. To determine and standardise the conditioning modes for different forms of inoculum.

.. To study the effectiveness of the inoculum at host plant level.

.. To establish and standardise the methodology for inoculum handling and its distribution network.

3. Production Methodologies -

.. Candidate strain

.. Substrate

.. Host plant

.. Monosporal Culture

.. Primary Multiplication

.. Secondary Multiplication

.. Mass Production

.. Quality Control

4. Isolation of VAM Monospores -

.. Agroforestry Species

.. Horticultural Crops

.. Millets

.. Pulses

.. Vegetables

.. Ornamental Plants

5. Secondary Inoculum Production -

.. Bahia Grass - Soyabean

.. Guinea Grass - Pithecelobium dulce

.. Jowar

.. Onion

.. Sunflower

6. Host Plants -

Cenchrus ciliaris (Anjan Grass)

Cenchrus gayana (Rhodes Grass)

Panicum maximum (Guinea Grass)

Panicum maximum Var - Hamell (Guinea Grass)

Paspalum notatum (Bahia Grass)

7. Selection of Substrate -

Sand : Soil (1:1)

Sand : Soil (1:2)

Sand : Soil (1:3)

Sand : Soil (3:1)

Perlite

Vermiculite

Soilrite

Perlite : Vermiculite (1:1)

Perlite : Vermiculite (1:2)

Perlite : Vermiculite (2:1)

Solrite : Vermiculite (1:1)

Perlite : Solrite (1:1)

Vermiculite : Solrite (1:1)

8. Selection Strategies

Host Plant - Bahia Grass, Guinea Grass

Substrate - Sand - Soil (3:1)

- Perlite - Soilrite (1:1)

VAM Strain - Glomus Spp.

9. Effect of VA Mycorrhiza and Phosphorous Application on Plant Growth (Sunflower)

10 VAM Inocula -

Grannular type - infected root segments (mixed inoculum)

Spores

Substratum - Sand

Soil

Soilrite

Perlite

Vermiculite

Expanded Clay

Freeze Dried Culture - Infected root segments + spores + Cryoprotectives nutrient solution.

11 Work Summary -

.. Soil Sample Collection

.. Monosporal Cultures

.. Primary Multiplication

.. Secondary Multiplication

.. Selection of host plant

.. Selection of substrate

.. Selection of VAM Strain

.. Pilotscale Mass Production

.. Quality Control

.. Field Trials

.. Delivery System

.. Networking / Extension

DEVELOPMENT OF IMPROVED MAREK'S DISEASE VACCINE

SLIDE B

MAREK'S DISEASE PROBLEM

PRESENT DAY VACCINE

RATIONALE

SLIDE C

POULTRY POPULATION

LAYERS : 76.5 Million

BROILER : 168 Million

SLIDE D

POULTRY FARM SIZE

BIRD CAPACITY	% OF ALL FARMS
0 To 1000	53
1000 To 5000	39
5000 To 45000	7
50000 and above	1

SLIDE E

OBJECTIVES

DEVELOPMENT OF CELL CULTURE TECHNOLOGY

.. ROLLER BOTTLE

.. MICRO CARRIER

ECONOMY OF VACCINE PRODUCTION

IMPROVEMENT OF PRESENT DAY M.D. VACCINE

SLIDE F

FLOWCHART OF WORK PLAN

SLIDE G

THREE TYPES OF CELL CULTURE SYSTEMS

SLIDE H

CYTODEX MICROCARRIERS - TYPES

CYTODEX 1

CYTODEX 2

CYTODEX 3

SLIDE I

ANCHORAGE DEPENDANT CELL CULTURE PROCESS

SLIDE J

ADVANTAGES OF MICROCARRIER CELL CULTURES

.. INCREASED PRODUCTION CAPACITY

.. IMPROVED CONTROL

.. REDUCED REQUIREMENTS FOR CULTURE MEDIUM

.. REDUCED REQUIREMENT FOR LABOUR

.. LOWER RISK OF CONTAMINATION

SLIDE K

INFRASTRUCTURE DEVELOPMENT - SPF FLOCK

- SPF FLOCK ON DEEP LITTER SYSTEM

SLIDE L

SPF FLOCK ON FALSE FLOORING

SLIDE M, N, O, P, Q, R, S,

LABORATORY INFRASTRUCTURES

.. BUILDINGS

.. PRODUCTION FACILITIES

.. TESTING FACILITIES

SLIDE T

COMPARATIVE PERFORMANCE OF DIFFERENT TECHNIQUES FOR PRODUCTION OF 10 MILLION DOSES OF M.D.VACCINE

SLIDE U

WHY NEED FOR IMPROVED M.D.VACCINE

1. IS THERE LIKELY TO BE CONTINUED CHANGE IN THE VIRUS AS HAS HAPPENED WITH THE APPEARANCE OF VERY VIRULENT M.D. VIRUS ?
   - YES

2. WILL THERE BE A CONTINUED AND INCREASING NEED FOR POLYVALENT VACCINES ?
   - YES

(Ref Dr. P.M.Biggs - Proceedings of International Symposium on M.D., 1984).

DEVELOPMENT OF CHEAP CATTLE FEED

USING LOCALLY AVAILABLE FEED RESOURCES

SLIDE A

* SURVEY
* EVALUATION
* TREATMENTS
* DEMONSTRATION

SLIDE B

WORK SUMMARY

* COLLECTION OF INFORMATION
* ANALYSIS OF FEED SAMPLES
* INFRASTRUCTURE

SLIDE C

PRINCIPAL CROPS IN RAJASTHAN

FOOD CROPS	NON FOOD CROPS
WHEAT (7)	SESAMUM (14)
PEARLMILLET (25)	RAPESEED & MUSTARD (9)
MAIZE (11)	COTTON (5)
SORGHUM (5)	LINSEED (5)
GRAM (18)	SUNHEMP (7)

FIGURES IN BRACKET INDICATE % SHARE OF STATE IN TOTAL PRODUCTION OF THE COUNTRY.

SLIDE D

VARIABILITY IN COMPOSITION & DIGESTIBILITY

OF CROP RESIDUES

RESIDUES : PADDY STRAW

SORGHUM STOVER

OBSERVATIONS : TWO FOLD VARIABILITY IN CP

7-10 UNITS VARIABILITY IN OMD AND CWD

SLIDE E

TREATMENT STUDIES

RESIDUES : PADDY STRAW

MAIZE STRAW

TREATMENT : UREA AMMONIATION

OBSERVATIONS : IMPROVEMENT IN CP CONTENT

DIGESTIBILITY

SLIDE F

ACTION PLAN FOR 1990 - 91

* SURVEY ANALYSIS
* EVALUATION OF FEED
  - .. IN VITRO
  - .. IN VIVO

DEVELOPMENT AND STANDARDISATION OF SERICULTURE TECHNOLOGY

SLIDE A

RELEVANCE OF SERICULTURE

* LOW GESTATION PERIOD
* GOOD SELF EMPLOYMENT POTENTIAL
  - .. DIRECT
  - .. INDIRECT
* YEAR ROUND EMPLOYMENT
* REMUNERATIVE EMPLOYMENT
* GOOD POTENTIAL FOR FORWARD LINKAGES

SLIDE B

OBJECTIVES

* DEVELOP APPROPRIATE TECHNOLOGY PACKAGE
* STUDY MULBERRY VARIETIES
* PRODUCTION AND TRANSPORTATION OF DFLS

SLIDE C

WORK SUMMARY

* MULBERRY PLANTATION ESTABLISHED
* SILKWORM REARING INITIATED
* SEED ORGANISATION PLANNED
* EQUIPMENT PROCUREMENT INITIATED

SLIDE D

MULBERRY PLANTATION

* ESTABLISHMENT OF MULBERRY PLANTATION (3 LOCATIONS)
* COLLECTION OF GERM PLASM (15 VARIETIES)

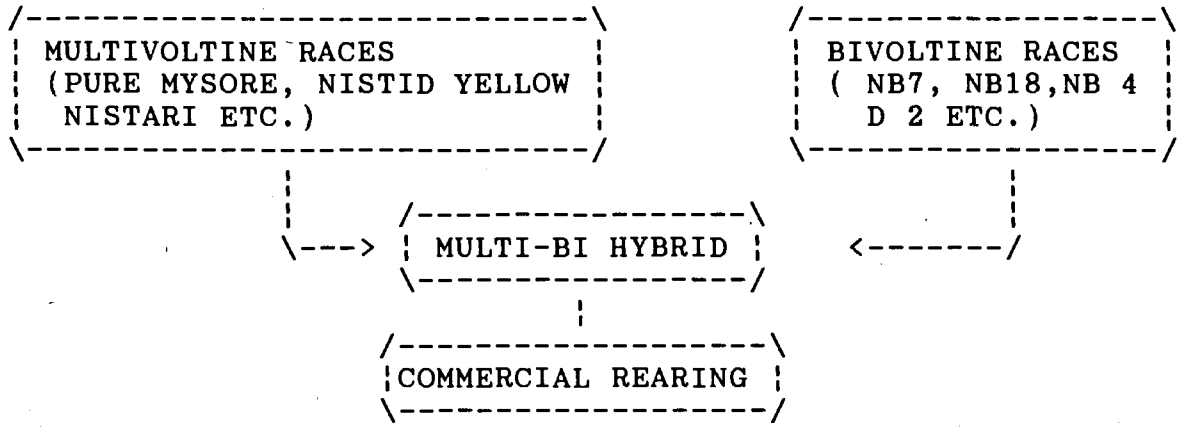
SLIDE E

SILKWORM REARING

* INITIATED AT VANSDA AND KADOD
* RECORDING SYSTEMS BEING STREAMLINED
* FARMER LEVEL EXTENSION INITIATED
* APPLIED RESEARCH AREAS IDENTIFIED
  - .. LEAF PRESERVATION
  - .. DEVELOPMENT OF IMPROVED MOUNTAGES
  - .. TRANSPORTATION OF SILKWORM EGGS

SLIDE F

SILKWORM SEED ORGANISATION



SLIDE G

ACTION PLAN FOR 1990 - 91

* ESTABLISHMENT & MULTIPLICATION OF GERM PLASM
* SILKWORM REARING STUDIES
* STUDIES ON LEAF PRESERVATION
* DEVELOPMENT OF IMPROVED MOUNTAGES
* TRANSPORTATION OF SILKWORM EGGS
* OTHER ACTIVITIES :
  - .. EQUIPMENT PROCUREMENT
  - .. ESTABLISHMENT OF TECHNICAL LINKAGES

EXPLORATORY STUDIES AND OPERATIONS RESEARCH

ON

POST PRODUCTION TECHNOLOGIES

SLIDE A

SCENARIO IN VANSDA

.. MIGRATION

.. SOCIO - ECONOMIC EXPLOITATION

BAIF'S WADI PROGRAMME :

.. HORTICULTURE PLANTATION

.. MANGO, CASHEW

.. FORESTRY PLANTATION

.. TEAK, EUCALYPTUS, LEUCAENA

.. INCOME GENERATION THROUGH VALUE ADDITION.

SLIDE B

OBJECTIVES

.. STUDY EXISTING POST PRODUCTION SYSTEMS

.. NEEDS ASSESSMENT

.. O.R. ON APPROPRIATE TECHNOLOGY

- MANGO
- TRADITIONAL PRODUCE
- PADDY
- OILSEEDS

SLIDE C

WORK SUMMARY

STUDY OF POST HARVEST PRACTICES

.. PADDY

.. OILSEEDS

.. MANGO PROCESSING ON TRIAL BASIS.

SLIDE D

POST HARVEST PRACTICES : OBSERVATIONS

PADDY :

THRESHING	:	MANUALLY/ BY BULLOCKS
DEHUSKING	:	DAILY, MANUALLY
STORAGE	:	BAMBOO CONTAINERS
SALE PRACTICES	:	DISTRESS SALE
	:	HIGH QUALITY SALE
	:	SURPLUS SALE

SLIDE E

POST HARVEST PRACTICES : OBSERVATIONS

OILSEEDS :

OILSEEDS	:	NIGER AND MAHUA
OIL CONSUMPTION PER FAMILY	:	34.5 KG/YEAR
OIL PRODUCTION PER FAMILY	:	12.5 KG/YEAR
CAKE	:	RETAINED BY MILL OWNER

SLIDE F

MANGO PROCESSING

PROBLEMS :

PERISHABILITY

PREMIUM PRICE ONLY FOR A SMALL VOLUME

PROCESSED PRODUCTS TRIED :

.. MANGO PULP - CANNED

- SULPHITED

.. MANGO LEATHER

.. PULP CONCENTRATE.

SLIDE G

ACTION PLAN FOR 1990 - 91

RESEARCH STUDIES :

.. CHARACTERISATION OF MANGO PULP

.. STANDARDISATION OF PROCESSES FOR TRADITIONAL DRIED MANGO PRODUCTS.

.. DEVELOPMENT OF SOLAR DRYER.

.. DEVELOPMENT OF ENTREPRENEURSHIP.

INTRODUCTION OF SIMPLE MACHINERY :

.. PADDY - THRESHERS, DEHUSKERS

.. OILSEEDS - OIL EXPELLER .